

VZCZCXRO6392
RR RUEHGA RUEHHA RUEHQU RUEHVC
DE RUEHOT #0156/01 0311803
ZNR UUUUU ZZH
R 311803Z JAN 08
FM AMEMBASSY OTTAWA
TO RUEHC/SECSTATE WASHDC 7227
INFO RUCNCAN/ALL CANADIAN POSTS COLLECTIVE
RUCPDOG/DEPT OF COMMERCE WASHDC
RHEBAAA/DEPT OF ENERGY WASHDC
RUEAEPA/EPA WASHDC
RUEANFA/NRC WASHDC

UNCLAS SECTION 01 OF 04 OTTAWA 000156

SIPDIS

SENSITIVE
SIPDIS

DEPARTMENT FOR WHA, OES, EB, AND ISN
DOE FOR P&I, NE AND NNSA
EPA FOR OFFICE OF THE AMINISTRATOR AND INTERNATIONAL AFFAIRS
COMMERCE FOR 4320/ITA/MAC/WH/ONIA - WORD

E.O. 12958: N/A
TAGS: [TRGY](#) [TBIO](#) [PGOV](#) [BTIO](#) [ENRG](#) [CA](#)
SUBJECT: CANADA'S NUCLEAR SECTOR: REACTOR SHUTDOWN
HIGHLIGHTS BROADER CONCERNS

REF: A. 2007 OTTAWA 2276

[1](#)B. 2007 OTTAWA 2260
[1](#)C. 2007 OTTAWA 2255

SENSITIVE BUT UNCLASSIFIED. Not for Internet distribution.

[1](#)1. (SBU) Summary. Natural Resources Minister Gary Lunn removed Linda Keen from the Presidency of the Canadian Nuclear Safety Commission (CNSC) late on January 15. (While no longer CNSC President, she remains a member of the Commission.) Undoubtedly the government hoped this would wrap up the two-month drama that began with a routine shutdown of the NRU reactor in Chalk River in mid-November (reported reftels), but this seems certain not to be the case. This episode serves to illustrate several distinct problems surrounding Canada's nuclear sector.

-- The dependence of half of the global market for certain short-lived medical isotopes on the operation of a single, half-century-old reactor.

-- Long-run financing problems facing GOC-owned reactor supplier Atomic Energy of Canada Limited (AECL), and the government's strategy for the company's future.

-- Staffing and capacity challenges faced by the CNSC, the nuclear regulator, not just vis-a-vis its current mission, but also in the face of a possible resurgence of the nuclear industry in Canada over the coming decade.

[1](#)2. (SBU) Comment: We think that, as a consequence of this affair, the very real resource and capacity problems of the Canadian nuclear regulator have gained greater prominence in Parliament and the public mind, and stand a better chance of being addressed. The prognosis for AECL, however, may be darker. This imbroglio has served to highlight the difficulty AECL is having with its replacement technology (now eight years behind schedule) for the aging reactor which produces the medical isotopes and its lack of success in moving its new power reactor design forward and finding early customers)- all at a juncture when the GoC has been considering putting the money-losing company on the auction block or otherwise divesting itself of it. The affair may also affect Canada's position as the world's largest supplier of medical isotopes as other countries, in particular the United States, consider whether to pursue their own domestic production capacity. The significant political facets of

this episode are discussed septel. End Summary and Comment.

Overview of CNSC and AECL

13. In Canada nuclear regulation is solely a federal jurisdiction; the Canadian Nuclear Safety Commission (CNSC), formed in 2000 out of the former Atomic Energy Control Board, is the independent, quasi-judicial administrative tribunal and regulatory agency charged with that responsibility. It reports to Parliament through the Minister of Natural Resources (Gary Lunn). With roughly 500 employees, the CNSC has as its principal mandate to "protect people and the environment from licensed sources of man-made radiation resulting from the use of nuclear energy and materials." It also regulates the use of nuclear energy and materials in line with Canada's international commitments on the peaceful use of nuclear energy. In a series of reports over the past eight years Canada's independent Auditor General (AG) identified a series of challenges facing CNSC, in particular human resources issues of capacity, recruitment, and retention of capable staff, and clarification of roles and responsibilities. In its first audit, in 2000, the AG found that CNSC's regulatory activities were not based on a rigorous, well-documented system of risk analysis; and that only a few CNSC divisions had developed formal approaches to risk analysis as a basis for proposing regulatory activity.

14. (SBU) Canada's federal government owns Atomic Energy of Canada Ltd. (AECL), a money-losing, 55-year-old reactor design/supply/service firm. AECL has sold 12 reactors to Argentina, India, China, South Korea and other developing countries (the last reactor sale was to China in 1999), but it is not clear AECL will be competitive for future international business against U.S. and European competitors, and even its prospects for domestic Canadian new builds are

OTTAWA 00000156 002 OF 004

very uncertain.

15. (SBU) While all reactors now in use in Canada are of AECL design, only the oldest unit is directly operated by AECL: the so-called National Research Universal or NRU reactor built in the early 1950s at Chalk River, Ontario, about 100 miles west of Ottawa. Approximately half of all diagnostic nuclear medicine procedures performed worldwide depend on Molybdenum-99 from the NRU reactor; these isotopes are packaged and distributed by MDS Nordion, Inc. (a private sector concern spun off from AECL around 1990). Because these isotopes have half-lives of a few days or less, this business depends on more or less continuous operation of the NRU. Construction of two new reactors dedicated to isotope supply (known as "Maple 1 and 2") and intended to replace the NRU in that capacity are significantly over budget and over eight years behind schedule. Current AECL expectations are that the Maples will come on-line in late 2008 and early 2009.

What Happened?

16. (U) When the NRU was shut down for routine maintenance on November 18, CNSC inspectors verified that modifications to the reactor's cooling system called for in an August 2006 licensing review had not been installed. CNSC notified AECL the NRU was not in compliance with its license and could not therefore be restarted. AECL did not restart the reactor, but claimed the modifications were upgrades, not mission critical, and could be accomplished over a longer period of time during forthcoming monthly maintenance periods. AECL claimed it could continue to operate the NRU safely without the additional equipment, at least as an interim measure. The impasse between the regulator and AECL extended the scheduled NRU shutdown from one week to over a month, and the shutdown would have gone longer had the government not intervened and temporarily exempted the reactor from CNSC oversight (through emergency legislation that had all party support) to allow its restart (ref a).

Medical Isotopes) No Security of Supply?

17. (U) As a result of the extended NRU shutdown, global supplies of critical medical radio-isotopes dwindled. (Only five reactors around the world produce these radio-isotopes, one each in France, Belgium, Netherlands, South Africa, and Canada.) Since many isotopes have half-lives measured in hours, any unplanned reactor shutdown easily leads to supply disruption. The NRU alone accounts for over 50 percent of global supply of Molybdenum 99, which is the source of Technetium-99m, the most widely used isotope for diagnosing disease. Compounding the shortage, the South African reactor went down for scheduled maintenance in early December. (Maintenance schedules are coordinated among reactor operators well in advance, but it had been anticipated the NRU would be back on-line by the end of November.)

18. (SBU) In early December as medical concerns heightened -- the head of the Canadian Medical Association indicated he was "very concerned" -- Health Canada initiated efforts at some 800 hospitals and clinics to monitor radioisotope shortages and plan a response. (The government in fact portrayed the issue as one of public health from the beginning, leading the Prime Minister to claim in the House of Commons that operating the NRU without the safety upgrades posed "no threat to nuclear safety at all.") The NRU shutdown exposed the lack of additional production capacity worldwide, and in particular the vulnerability of the United States which, although the largest consumer of medical isotopes, has no commercial production capacity at all for key elements such as Molybdenum 99. Indeed, Congress has tasked the U.S. National Research Council to examine further the risks to the American public due to the lack of domestic production capacity.

Precarious Finances) End ahead for AECL?

19. (SBU) Atomic Energy of Canada Ltd., established in 1951, is wholly owned by the GOC and has always required subsidies, which have been trimmed over the past decade even as reactor sales have gone flat. (The last AECL sales were to China (2) and Korea (4) in the 1990s.) Indeed, Minister Lunn himself noted that there has been a "chronic shortage of funding for

OTTAWA 00000156 003 OF 004

AECL going back over 14 years," and the firm's under-capitalization and poor accounting have been documented repeatedly by the Auditor General. In an otherwise bleak immediate market, much hope has been invested in the putative "nuclear renaissance" expected as a consequence of policies aimed at reducing greenhouse gas emissions.

110. (SBU) AECL has been lobbying the Ontario provincial government and utility firms to spend about C\$12 billion on eight new reactors required to meet the province's energy needs over the next 20 years. However, a 2007 public declaration by Ontario premier Dalton McGuinty that AECL's heavy-water reactor technology (so-called CANDU for "CANada Deuterium Uranium", a reference to its heavy water moderator) was not a shoo-in and that all technologies would be considered, was a blow to AECL expectations. This distress was exacerbated when the CNSC decided to discontinue its "pre-licensing assessments" (citing resource constraints) of AECL's new flagship reactor design, the Advanced CANDU Reactor (ACR), which was to be pitched to Ontario. The loss of this pre-licensing assessment puts AECL at a competitive disadvantage in marketing the ACR, which has so far cost about C\$300 million to develop.

111. (SBU) In November 2007, just before the NRU isotope story broke publicly, the Conservative federal government announced a broad review of AECL's future, including the possibility of selling the company. That long-rumored review is now on hold due to the turbulence around the isotope affair.

¶12. Comment: This may, however, only be a stay of execution.

There is no shortage of criticism of AECL, fueled by reports from the Auditor General, not just in 2007, but also in 2002 and 1996, pointing to mismanagement and lack of transparency as critical and on-going failures at AECL. And contrary to normal practice, AECL had not previously made the earlier reports public. Divestment is certainly a political option, as governments of both parties have participated in the gradual privatization of, for example, PetroCanada, an integrated oil company, Air Canada, and the CN railroad over the past two decades. However, if the ACR fails to attract Canadian buyers, AECL's financial prospects and its attractiveness to potential investors are open to question. End comment.

CNSC Capacity) Is Confidence Warranted?

¶13. (SBU) Since inception, CNSC has struggled with problems of under-capacity, caught between limited funding, the aging demographics of nuclear professionals, and a current and anticipated rise in regulatory demands due to reactor refurbishments, redesigns, probable new builds, and plans for waste management. In this case, although the downstream supply of medical isotopes is not formally the regulator's concern, Linda Keen's choice to stick to the licensing rule book suggests that the capacity to assess the broader impacts of CNSC decisions may have been lacking)- perhaps a direct consequence of a relatively young organization lacking sufficient resources. On the plus side, in its most recent assessment (2005), the Auditor General found CNSC was making satisfactory progress in implementing its recommendations from the 2000 audit in areas such as human resource planning and implementation of an integrated, risk-informed approach to regulatory activities. Comment: The high profile events of the past two months have clearly served to make Parliament aware of the regulator's constraints. Given that Canada cannot do without a nuclear regulator, these events may compel the government and Parliament to provide additional resources needed to remedy them, rather than to sweep them under the carpet yet again. On the other hand, rational assessment and treatment of these events in the political domain is anything but assured. End comment.

What Does It All Mean?

¶14. (SBU) Despite the resource and organizational challenges faced by the CNSC and the apparent lack of a robust response by the regulator in the face of this unique set of circumstances, the evidence, including assessments by the Auditor General, still suggests that the CNSC is a capable and credible nuclear regulator that should retain the trust of its international peers. Realistically, the government cannot dispense with CNSC, and may well be forced to find

OTTAWA 00000156 004 OF 004

additional resources to address its identified problems. On the other hand, the fate of AECL in the wake of this imbroglio is cloudy. The company undoubtedly lost some government goodwill, from an already diminished reserve, and its failure to comply with NRU licensing conditions (i.e., the installation of the two back-up cooling pumps) for 18 months certainly will not help the firm's credibility with prospective customers in Canada, the United States, or elsewhere. While to the casual observer AECL seems to have come out of the squabble over NRU relatively unscathed, the real implications for the company may be far different, and it is unclear to what extent the government will continue to support the loss-making firm. In broader terms, this may be welcome news for AECL's international competitors.

Visit Canada's Economy and Environment Forum at
<http://www.intelink.gov/communities/state/canada>

WILKINS